

# CLASS 2: RESISTANCE

By Cathy Ward, CALA-SA (South Africa) Trainer

Special notes for second class

- \* Wear bathing costume/suit
- \* Do not get straight into the pool
- \* Short recap of previous session

## REVIEW - QUICK

- \* Body, mind, spirit
- \* Question and answer

## OBJECTIVES

- \* To learn the importance of water specific exercise for health & fitness
- \* To understand resistance
- \* To feel different resistance options
- \* To understand the purpose of visual cues
- \* To learn appropriate resistance cues

## WATER VERSUS LAND

Because of the magical properties of water, exercising in water creates a totally different physical experience for the body than its land-based counterpart. During these sessions, you will learn how to effectively use the water in order to maximize your workout and ensure your safety in the pool. All the exercises are designed specially for the water in order to achieve the goals of fitness that you have set. It takes time to learn to move with comfort in the water. During the learning phase you may make mistakes. You may feel uncoordinated and you may struggle with certain exercises. It is natural. Eventually your brain will develop a neuromuscular pathway to the muscles and the exercise will become familiar. This will enable you to apply more effort to the move and become fitter.

## RESISTANCE

The density of water is approximately 1,000 times greater than air. This requires the body to work harder in the water than when exercising on dry land. The resistance to movement in all directions, gives great potential to exercise the muscles sufficiently to achieve goals of fitness. The resistance or "pressure drag" can be altered by manipulating the shape, size and speed of the moving body parts. The amount of work done is a determined by resistance x distance traveled (range of motion).

## HOW TO FEEL RESISTANCE OPTIONS

Lift your hand out of the water, form a gentle fist with your hand and punch the air. Now put your hands and arms back into the water and punch again. Which move is harder to perform?

Walk slowly through the water. Now run as fast as you can. Which action is harder to perform?

With elbows bent at 90°, swing your arms backwards and forwards as if you were running on land. Now swing arms without bending them, keeping arms straight. Which action is harder to perform?

It is possible to manipulate the body and the way it moves in order to make the actions harder or easier. Once you



know which options to use, you may choose your own comfortable zone in which to work. In other words, you may decide whether you would like to increase or decrease your resistance to suit your specific need. When you increase surface area or speed, you must expend more energy to execute the move. Then you will increase metabolism and burn more calories.



of the hand is enlarged. Ensure that a fist is a comfortable hand position, and if it should hurt at all, your option is to hold the fingers rather folded than fist. A fold is similar to a fist, but without the top part of the fingers tucked under. Pretend that you are holding an egg, rather than clenching.

A flat hand is the hardest resistance option. When opting for a flat hand, the wrist joint should not flop around. Keep it firm.

Hand positions used to increase or decrease resistance are the following:

- \* Slice: the hand slices through the water
- \* Fist/fold: form a fist, the hand punches through the water
- \* Flat: form a paddle shape, the hand pushes/pulls the water

The slice is the easiest resistance option. Keep the thumb tucked in to the side of the hand to prevent injury to the thumb joint. The first option exerts more resistance as the surface area

### VISUAL CUEING

The pool environment often creates communication challenges due to the following reasons:

- \* Noisy gym
- \* Poor acoustics
- \* Swimmers using a section of the pool
- \* Short sound of the moving water

Visual cues to reinforce correct alignment and reinforce safety will help to overcome the challenges of this environment.

#### Surface area Cues:

slice hand	Show a slice hand position. Draw attention to the hand position by pointing to and looking at your hand. Then, show the arm action you want with the slice hand position
fist/fold hand	Show a fist or fold hand position. As above, draw attention to the hand, then show the arm action you want with the fist or fold hand.
flat hand	Show a flat hand position. As above, draw attention to the hand, then show the arm action you want with the flat hand position.
gentle pointed foot	Show a gentle point (plantar flex) position. Draw attention to the foot, then the leg action you want with the pointed foot.
gentle flexed foot	Show a gentle flex (dorsi flex) position. Draw attention to the foot, as above, then show the leg action you want with the flexed foot.
lever length	Show the difference between a long and a short lever. Next, emphasize the lever length that you suggest, by demonstrating the move with that lever length option

#### Speed of motion – tempo cues

tempo	Make a “T” shape with the hands by placing the palm of one hand on top of the fingers of the other hand with vertical forearm (“time out” symbol in sport)
half tempo	Hold one arm vertical (bottom part of “time out” symbol above). Make a diagonal downward slicing action across the middle of the vertical forearm, then place the slicing hand/arm on top (“T”)
quarter tempo	Same basic format as the half tempo cue, but perform two distinct slicing actions.
double tempo	Hold the bottom part of the “time-out” symbol above, then show a “v-shape” with the fingers of the other hand, indicating “two”. Tap the “v-shape”, twice on top of the tips of the hand that is in a vertical position.